REMARKS

I. RESTRICTION REQUIREMENT

Claims 1-39 were pending in this application. Examiner has made the Restriction Requirement that the pending claims be restricted to one of the following nine groups of invention under 35 U.S.C. § 121:

Group I: Claims 2-8, 30, and 37-38, allegedly drawn to a method of regulating quorum sensing with an antibody that binds to the signaling molecule for a LuxR or homologue of LuxR.

Group II: Claim 9-11 and 15, allegedly drawn to antibodies that bind to LuxR or a homologue of LuxR or antibodies that represent the LuxR antigen and are anti-idiotypic antibodies.

Group III: Claims 15-20, allegedly drawn to compositions that comprise one of: LuxR or LuxR homologue protein or fragment thereof or a LuxR or LuxR homologue or fragment thereof, nucleic acid coding sequence or a quorum sensing signaling molecule composition.

Group IV: Claims 21 and 23-25, allegedly drawn to methods of making a medicament that is a LuxR or LuxR homologue protein/polypeptide or nucleic acid or antibody or quorum signaling molecule.

Group V: Claim 22, allegedly drawn to methods of sensitizing an antibiotic resistant bacterium with a LuxR or LuxR homologue protein/polypeptide or nucleic acid or antibody or anti-idiotypic antibody for LuxR/LuxR homologue or quorum signaling molecule.

Group VI: Claims 26-29 drawn to methods of making a medicament that comprises an antibiotic, the antibiotic being specific for one of the recited species of pathogen set forth in claim 27 or species of disease set forth in claim 28.

Group VII: Claims 31-32, allegedly drawn to methods of detecting quorum sensing bacteria with antibodies that bind to LuxR or a homologue of LuxR or antibodies tha tr4epresent the LuxR antigen and are anti-idiotypic antibodies.

Group VIII: Claims 33-34, allegedly drawn to methods of detecting antibodies specific to LuxR or LuxR homologue protein.

Group IX: Claims 35-36 and 39, allegedly drawn to kits that comprise an antibody or LuxR/LuxR homologue protein, or LuxR/LuxR homologue nucleic acid coding sequence or an antibiotic or a combination of any one or more of the above.

II. AMENDMENT TO THE CLAIMS

A new claim 40 is added, which corresponds to claim 9 in the Preliminary Amendment submitted on August 31, 2005 in response to the Written Opinion of the International Searching Authority dated March 18, 2005 and the Demand for International Preliminary Examination. Support for claim 40 is found in the specification, at page 5, lines 5-6. Thus, no new matter is introduced.

Claim 1 is amended to incorporate the subject matter of claims 2, 6 and 7. Hence, claims 2, 6 and 7 are cancelled, and no new matter is introduced.

Claims 3 to 5 are amended due to the cancellation of claim 2.

Claim 5 is also amended to remove its dependency on multiple dependent claim 4.

Claim 8 is amended to depend from claim 1 directly due to the cancellation of claim 7. Because the subject matter of claim 7 is incorporated into claim 1, this amendment does not introduce new matter.

Claims 9 and 10 are amended to refer to a reference sequence. Support is found in paragraph [0017] of the specification.

Claim 11 is amended to remove its dependency on claim 9 or claim 10. Support is found in paragraph [0017] of the specification.

Claim 12 and claim 13 are amended to depend from claims 9 to 11 and new claim 40. These two claims correspond to claims 10 and 11, respectively, in the Preliminary Amendment submitted on August 31, 2005 in the response to the Written Opinion of the International Searching Authority dated March 18, 2005 and the Demand for International Preliminary Examination. In addition, claim 13 is also amended to avoid its dependency on multiple dependent claim 12. No new matter is introduced.

Claim 15 is amended by limiting the pharmaceutical composition to comprising an antibody according to any one of claims 9 to 11 or claim 40. No new matter is introduced.

Claims 19-25 are amended to avoid dependency of multiple dependent claims on other multiple dependent claims. In addition, claims 20-25 are also amended to include the antibody of new claim 40, as presented in the amendment submitted on August 31, 2005 in the response to the Written Opinion of the International Searching Authority dated March 18, 2005 and the Demand for International Preliminary Examination. Thus, no new matter is introduced.

Claim 27 is amended to correct typographical errors and to remove three Gram positive organisms from the claim to ensure uniformity with claim 3.

Claims 28, 29, and 31 are amended from multiple dependent claims to single dependent claims. No new matter is introduced.

Claim 30 is amended to depend from claim 1 or claim 3 only, instead of claim 1 or claims 3-8. No new matter is introduced.

Claim 32 is amended to depend from claim 1 instead of claims 7 to 10 due to the cancellation of claim 7 and incorporation of the subject matter of claim 7 into claim 1. Thus, no new matter is introduced.

Claim 35 is amended to depend from claim 9 instead of claims 8 to 14. No new matter is introduced.

III. ELECTION WITH TRAVERSE

The Examiner asserts that the inventions listed in Groups I-IX do not relate to a single general inventive concept under PCT Rule 13.1, allegedly because they lack the same or corresponding special features. Specifically, the Examiner asserts that in light of the international search report that shows WO03/087145 describing the first appearing claimed special technical feature, the claimed inventions are not so linked by a special feature that makes a contribution over the prior art. Applicants provisionally elect Group I with traverse.

> A group of inventions is considered linked to form a single general inventive concept where there is a technical relationship among the inventions that involves at least one common or corresponding special technical feature. The expression special technical features is defined as meaning those technical

> features that define the contribution which each claimed invention, considered as a whole, makes over the prior art.

MPEP 1893.03(d). The instant application is drawn to, *inter alia*, a method of regulating quorum sensing in bacteria comprising modulating the activation by a signaling molecule of LuxR or a homologue thereof. Specifically, in this application the claims of Group II, *i.e.*, claims 9-11 and 15 as the Examiner designated, and claims 12-14 which are dependent from claim 9, are drawn to an antibody that immunoreacts with LuxR or a homologue of LuxR. The claims of Group I, *i.e.*, claims 2-8, 30, and 37-38, as well as claim 1 as amended, are drawn to a method of regulating quorum sensing with antibody, wherein the binding of an antibody prevents LuxR or homologue of LuxR from being activated by its signaling molecule. Thus, these two groups of claims are linked through the antibody that immunoreacts with LuxR or a homologue of LuxR.

Thus, Applicants respectfully submit that the claims of Group I and Group II possess the common technical feature that fulfills the unity of invention requirement under PCT Rule 13.1. Instead of selecting between the two species suggested by the Examiner for the restriction of Group I, *i.e.*, an antibody being anti-signaling molecule and the other being anti-idiotypic LuxR, Applicants provisionally elect an antibody that immunoreacts with LuxR or its homologue as the species for the search purpose. Applicants respectfully submit that search of the species for the claims of Group I and Group II would not put undue burden on the part of the Examiner. Applicants also respectfully submit that claims 1, 3-5, 8-15, 30, 35, 37-38, and 40 read on the species elected; therefore, these claims are pending for examination.

As for the Examiner's assertion that WO03/087145 describes "the first appearing claimed special technical feature" of this application, Applicants respectfully submit that the reference does not disclose a method of regulating quorum sensing. WO03/087145 merely discloses the LuxR homologue SdiA, the use of the isolated SdiA protein to raise antibodies, and the antibodies that bind to isolated SdiA. At best, this reference discloses the use of isolated SdiA for raising an immune response, but not a method of regulating quorum sensing, let alone a "method comprising modulating the activation by a signaling molecule of LuxR or a homologue thereof, wherein the binding of an antibody prevents LuxR or homologue of LuxR from being activated by its signaling molecule," as specified in claim 1 of the instant application.

In addition, the Examiner asserts that claim 1 is generic, allegedly because the first appearing invention directed to preventing activation of LuxR based upon binding of a signaling molecule is disclosed in the prior art reference US PG-Pub 2003/009585. However, the cited reference is a patent application publication related to "Dynamic Policy Based Routing" and is unrelated to the instant application. In any event, claim 1 has been amended to incorporate the limitations from the cancelled claims 2, 6 and 7. Applicants respectfully request reconsideration of this rejection in light of the amendment.

IV. STATUS OF THE CLAIMS

Claims 2, 6, and 7 are cancelled without prejudice to possible future prosecution. Claims 1, 3-5, 8-13, 15, 19-25, 27-32, and 35 are amended. Claims 16-29, 31-34, 36, and 39 are withdrawn without prejudice to possible rejoinder when the related pending claims are found allowable, or possible prosecution of these claims separately in the future. New claim 40 is added. Upon entry of this amendment, claims 1, 3-5, 8-15, 30, 35, 37-38, and 40 are pending for examination.

V. COMPLIANCE WITH THE SEQUENCE REQUIREMENTS

The Examiner objected to the application for failing to comply with the requirements of 37 C.F.R. §§ 1.821-1.825 for the alleged noncompliant format of the nucleotide or amino acid sequences.

In response, Applicants submit a substitute "Sequence Listing" and a "Statement" under 37 C.F.R. § 1.821 in support of the sequence along with this paper. Entry of this substitute "Sequence Listing" is respectfully requested.

VI. AMENDMENT TO THE SPECIFICATION

The Examiner objected to the specification for containing hyperlinks. In response, Applicants have herein amended the specification by removing the hyperlinks from paragraphs [0011] and [0012], respectively, thus overcoming the objections. No new matter is introduced in this amendment.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this application are in a condition for allowance, and an early notice to this effect is earnestly solicited

To the extent that any extra fees are required, in connection with receipt, acceptance and/or consideration of this paper and/or any accompanying papers submitted herewith, please charge all such fees to Deposit Account 50-1943.

Should Examiner have any questions or comments with respect to this Response, it is respectfully requested that the Examiner telephone Applicants' attorney at (609) 844-3020 to discuss any additional matters.

Respectfully submitted,

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